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INTEGRATED CONTROL VALVE FOR
A VARIABLE CAPACITY COMPRESSOR

Abstract of the Disclosure

An integrated capacity control valve for a variable capacity refrigerant compressor includes an integral pressure sensor that is continuously coupled to a discharge port of the valve for measuring the refrigerant discharge pressure. A
5 plunger of the control valve is disposed within a passage coupling the compressor crankcase to the discharge port, and is positioned by pneumatic and electric control elements to regulate the refrigerant suction pressure. The plunger has intersecting axial and lateral bores that define a continuous passage between the discharge port and a cavity in which the pressure sensor is retained
10 so that the sensor is continuously exposed to the discharge pressure regardless of the plunger position, and refrigerant discharge pressure in the lateral bore produces a bias force on the plunger that compensates the pneumatic suction pressure setpoint for a pressure drop between the evaporator and the suction port of the valve.